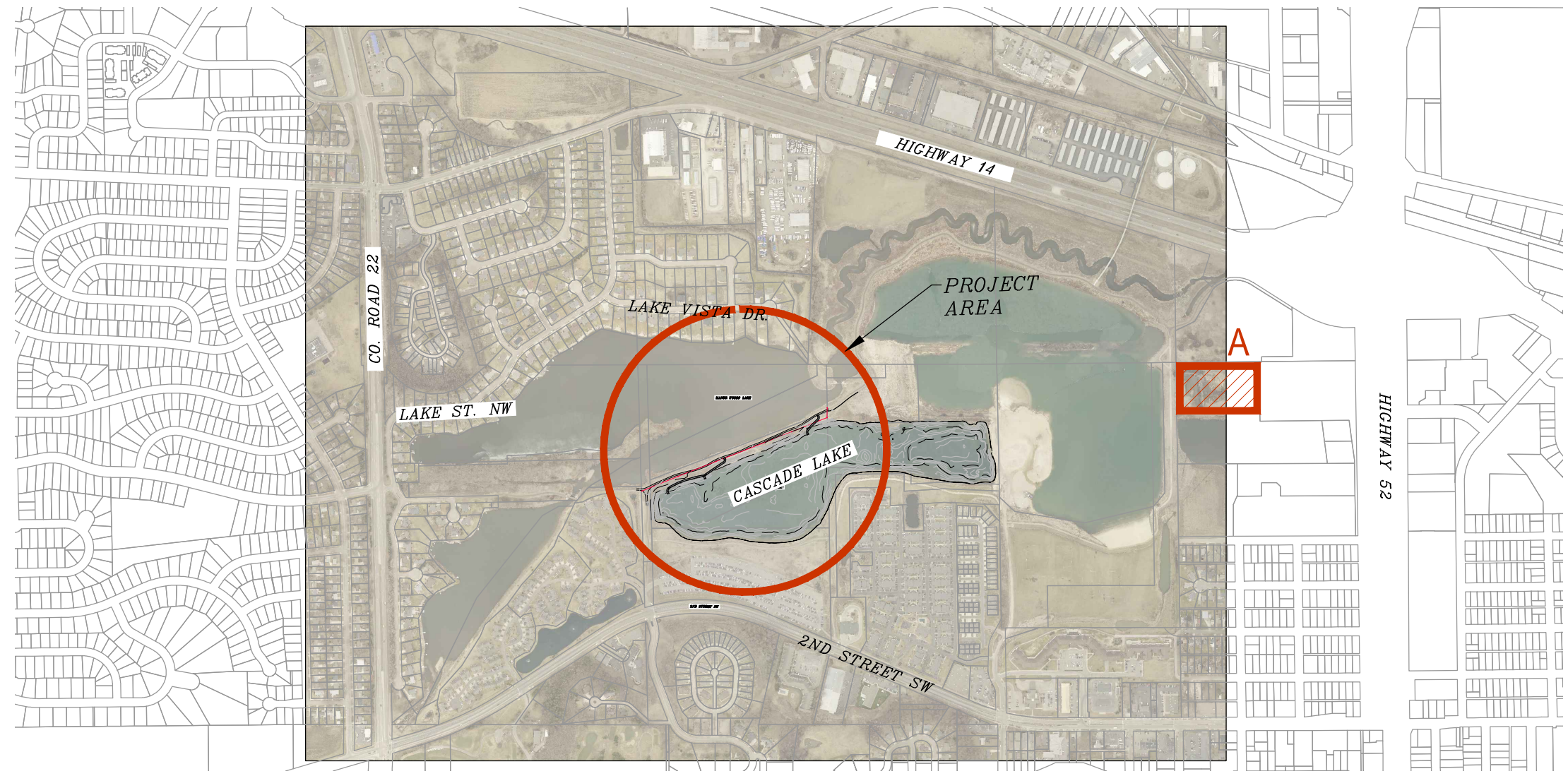
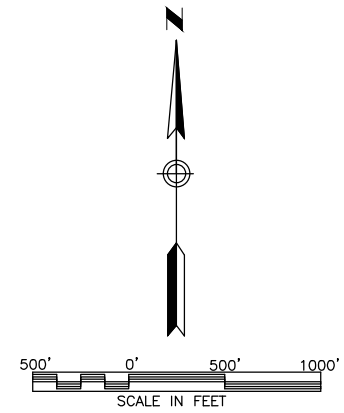



CITY OF ROCHESTER PARKS & RECREATION
CASCADE LAKE PARK HABITAT IMPROVEMENT PROJECT
STABILIZATION & FISH HABITAT CREATION - NORTH SHORE OF CASCADE LAKE



- SHEET INDEX:**
- SHEET 1: TITLE
 - SHEET 2: EXISTING CONDITIONS
 - SHEET 3: TRAFFIC CONTROL - ACCESS PATH
 - SHEET 4: SHORELINE TYPES
 - SHEET 5: FISHING ACCESS
 - SHEET 6: GRADING PLAN
 - SHEET 7: SEEDING & EROSION CONTROL
 - SHEET 8: DETAILS
 - SHEET 9: SWPPP
 - SHEET 10: GRADING PLAN - ALTERNATE A



-  **OPTIONAL COMMON BORROW LOCATIONS**
A - CITY PARK PROPERTY - SEE SPECS
B - DNR PROJECT - REHABILITATION OF CASCADE CREEK - SEE SPECS

 1648 Third Avenue SE Rochester, MN 55904 Tel: (507) 288-3919 • Fax: (507) 289-7333 wsbeng.com	CITY OF ROCHESTER PARKS & RECREATION 201 4th ST SE, Room 150 ROCHESTER, MN 55904	STABILIZATION & FISH HABITAT CREATION - NORTH SHORE OF CASCADE LAKE ROCHESTER, MINNESOTA		<small>I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A FULLY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA</small>  DAVID L. MORRILL, PE DATE: SEPT 25, 2015 LC. NO. 12713	
		SCALE:	AS NOTED		REVISION NO.
		PLAN BY: CK	DESIGN BY:		DATE
		CHECKED BY: DM	PROJECT NO: 02186-240		RECORD COPY BY:

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Traffic Control Notes

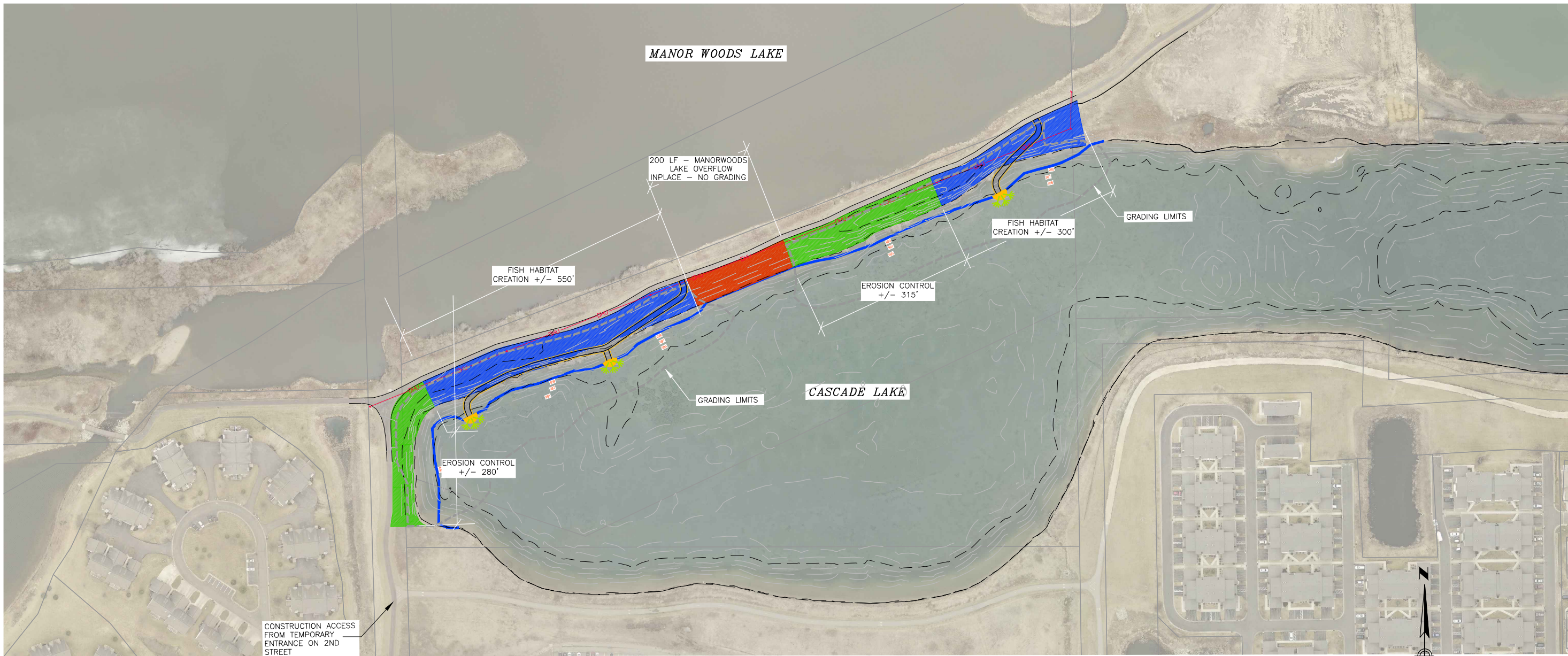
Contractor shall provide proper signage, fencing and barricades for securing work area and protecting entering and exiting traffic. This plan presents the general concept of the traffic control but is not to be considered a sign layout or full representation of the signage required.

- ▲ Provide Trail Closure signage
- ▲ Place Truck entering signage
- ▲ Trail to be closed by temporary fencing
- ▲ Provide stabilized Vehicle Exit

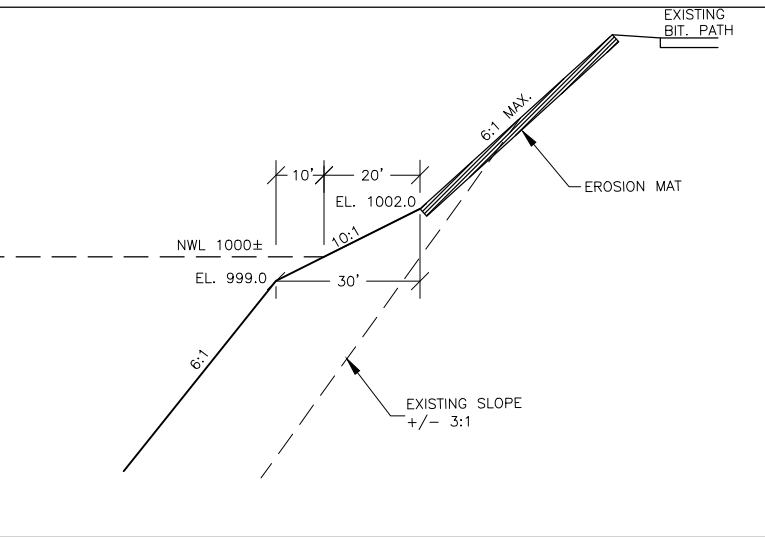
Contractor is responsible to clean and reopen trail at noon on Fridays and not close until 8:00 AM Monday. All trails and roadways shall be cleaned and swept to minimize dust. When opened for use, trails must be graded and shaped smooth. Class 5 surface is acceptable for interim trail openings.



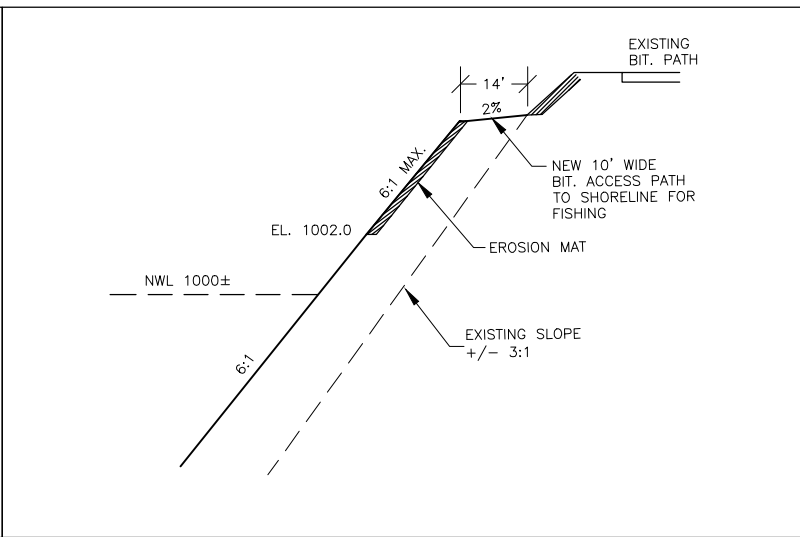
HAUL ROUTE
TEMPORARY CONSTRUCTION FENCE



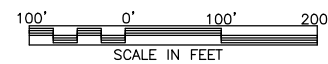
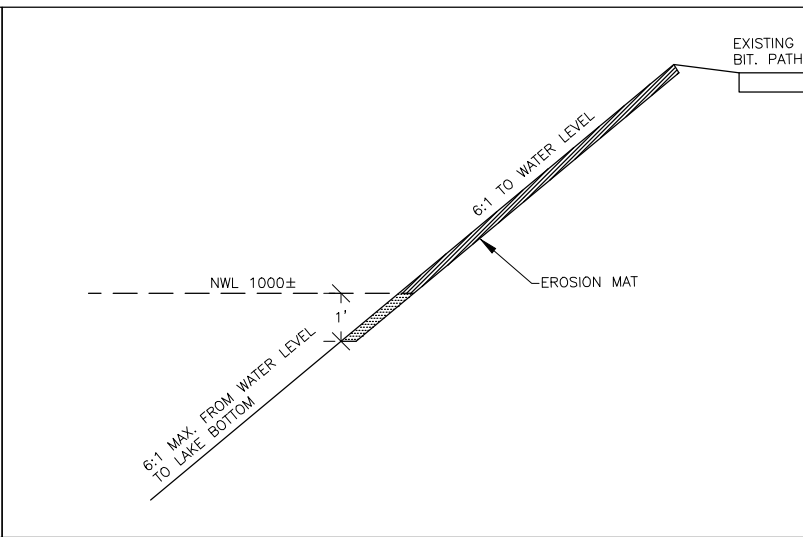
FISHERIES HABITAT TYPICAL SECTION @ ACCESS PADS



FISHERIES HABITAT TYPICAL SECTION W/ ACCESS PATH



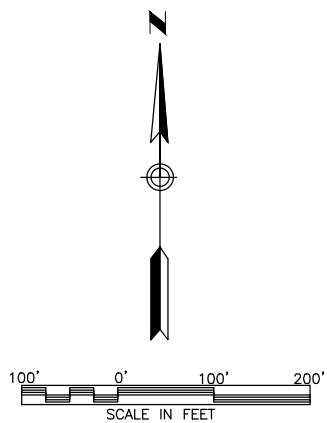
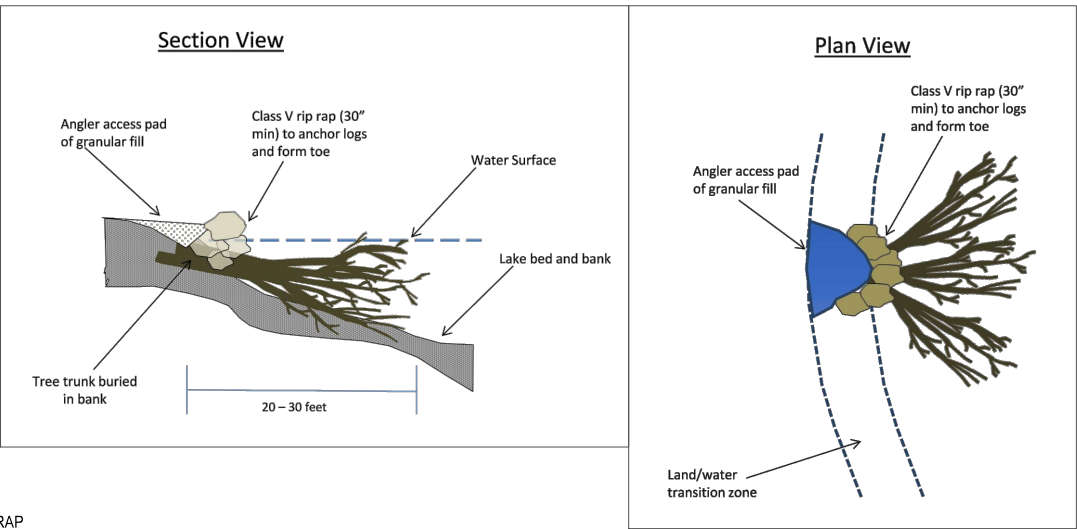
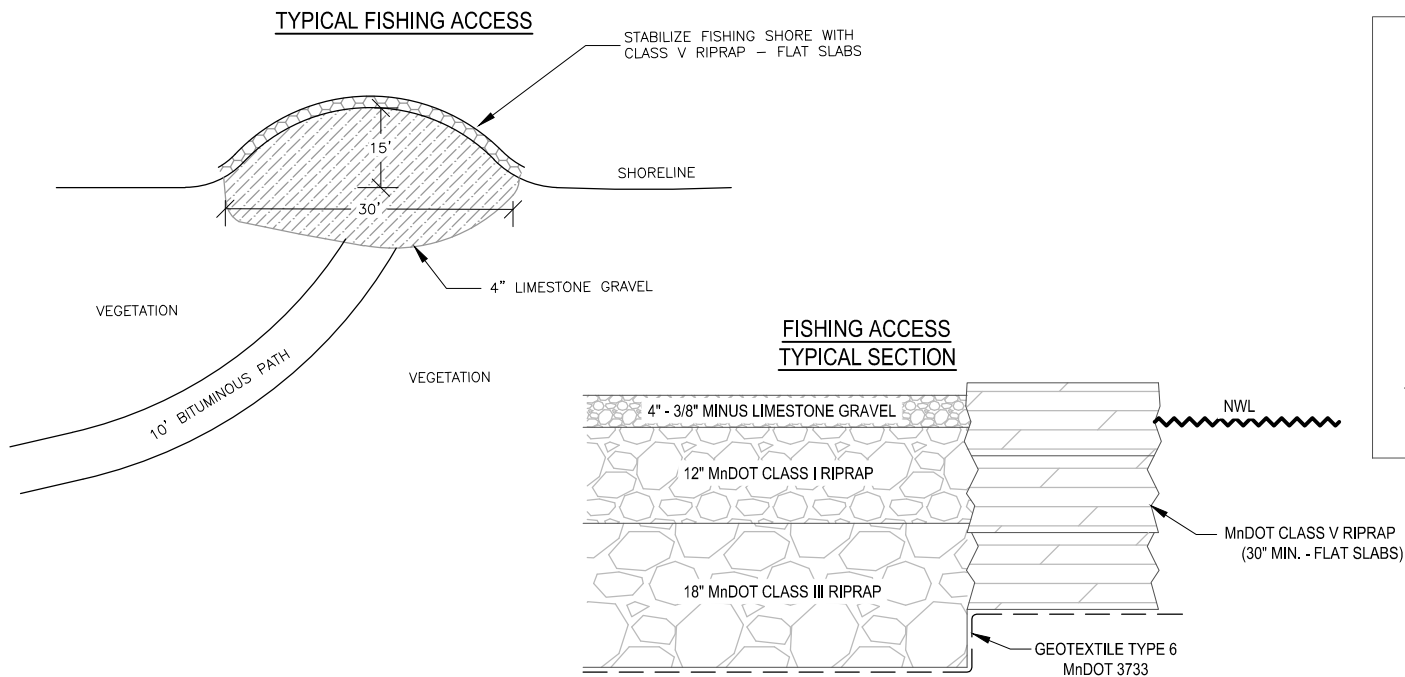
EROSION CONTROL TYPICAL SECTION



LEGEND

- GRADING LIMITS
- MANORWOODS LAKE OVERFLOW - NO WORK THIS AREA
- FISH HABITAT CREATION
- EROSION CONTROL

CITY OF ROCHESTER PARKS AND RECREATION 201 4th ST SE, Room 150 ROCHESTER, MN 55904		STABILIZATION & FISH HABITAT CREATION - NORTH SHORE OF CASCADE LAKE ROCHESTER, MINNESOTA		I HEREBY CERTIFY THAT THIS PLAN, SPECIFICATION, OR REPORT WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF MINNESOTA DAVID L. MORRILL, PE DATE: SEPT 25, 2015 LC: 12713		REVISION NO. DATE	EXPLANATION
1648 Third Avenue SE Rochester, MN 55904 Tel: (507) 289-3919 • Fax: (507) 289-7333 wsbeng.com		CITY OF ROCHESTER PARKS AND RECREATION 201 4th ST SE, Room 150 ROCHESTER, MN 55904		SCALE: AS NOTED PLAN BY: CK CHECKED BY: DM RECORD COPY BY:		DESIGN BY:	PROJECT NO: 02186-240
WSB engineering • planning • environmental • construction						DATE	



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CITY OF ROCHESTER
PARKS & RECREATION
201 4th ST SE, Room 150
ROCHESTER, MN 55904

STABILIZATION & FISH HABITAT
CREATION - NORTH SHORE OF
CASCADE LAKE

ROCHESTER, MINNESOTA

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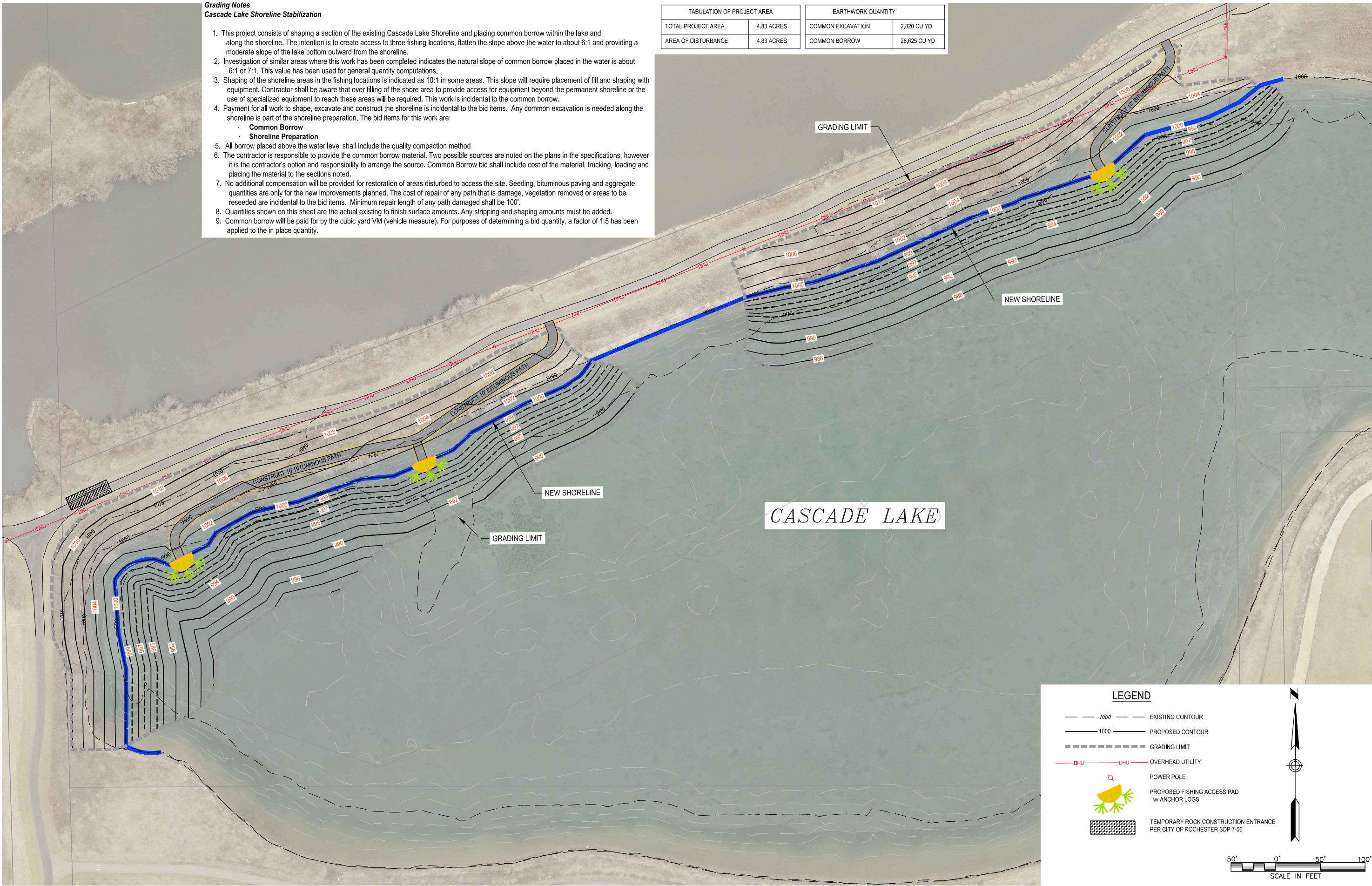
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DAVID L. MORRILL, PE

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Grading Notes
Cascade Lake Shoreline Stabilization

1. This project consists of shaping a section of the existing Cascade Lake Shoreline and placing common borrow within the lake and along the shoreline. The intention is to create access to three fishing locations, flatten the slope above the water to about 6:1 and providing a moderate slope of the lake bottom outward from the shoreline.
2. Investigation of similar areas where this work has been completed indicates the natural slope of common borrow placed in the water is about 6:1 or 7:1. This value has been used for general quantity computations.
3. Shaping of the shoreline areas in the fishing locations is indicated as 10:1 in some areas. This slope will require placement of fill and shaping with equipment. Contractor shall be aware that over filling of the shore area to provide access for equipment beyond the permanent shoreline or the use of specialized equipment to reach these areas will be required. This work is incidental to the common borrow.
4. Payment for all work to shape, excavate and construct the shoreline is incidental to the bid items. Any common excavation is needed along the shoreline is part of the shoreline preparation. The bid items for this work are:
 - Common Borrow
 - Shoreline Preparation
5. All borrow placed above the water level shall include the quality compaction method
6. The contractor is responsible to provide the common borrow material. Two possible sources are noted on the plans in the specifications; however it is the contractor's option and responsibility to arrange the source. Common Borrow bid shall include cost of the material, trucking, loading and placing the material to the sections noted.
7. No additional compensation will be provided for restoration of areas disturbed to access the site. Seeding, bituminous paving and aggregate quantities are only for the new improvements planned. The cost of repair of any path that is damage, vegetation removed or areas to be reseeded are incidental to the bid items. Minimum repair length of any path damaged shall be 100'.
8. Quantities shown on this sheet are the actual existing to finish surface amounts. Any stripping and shaping amounts must be added.
9. Common borrow will be paid for by the cubic yard VM (vehicle measure). For purposes of determining a bid quantity, a factor of 1.5 has been applied to the in place quantity.

TABULATION OF PROJECT AREA	
TOTAL PROJECT AREA	4.83 ACRES
AREA OF DISTURBANCE	4.83 ACRES

EARTHWORK QUANTITY	
COMMON EXCAVATION	2,820 CU YD
COMMON BORROW	28,625 CU YD

CITY OF ROCHESTER PARKS AND RECREATION
WSB No. 02186-240

GRADING PLAN
SHEET 6 OF 10 SHEETS

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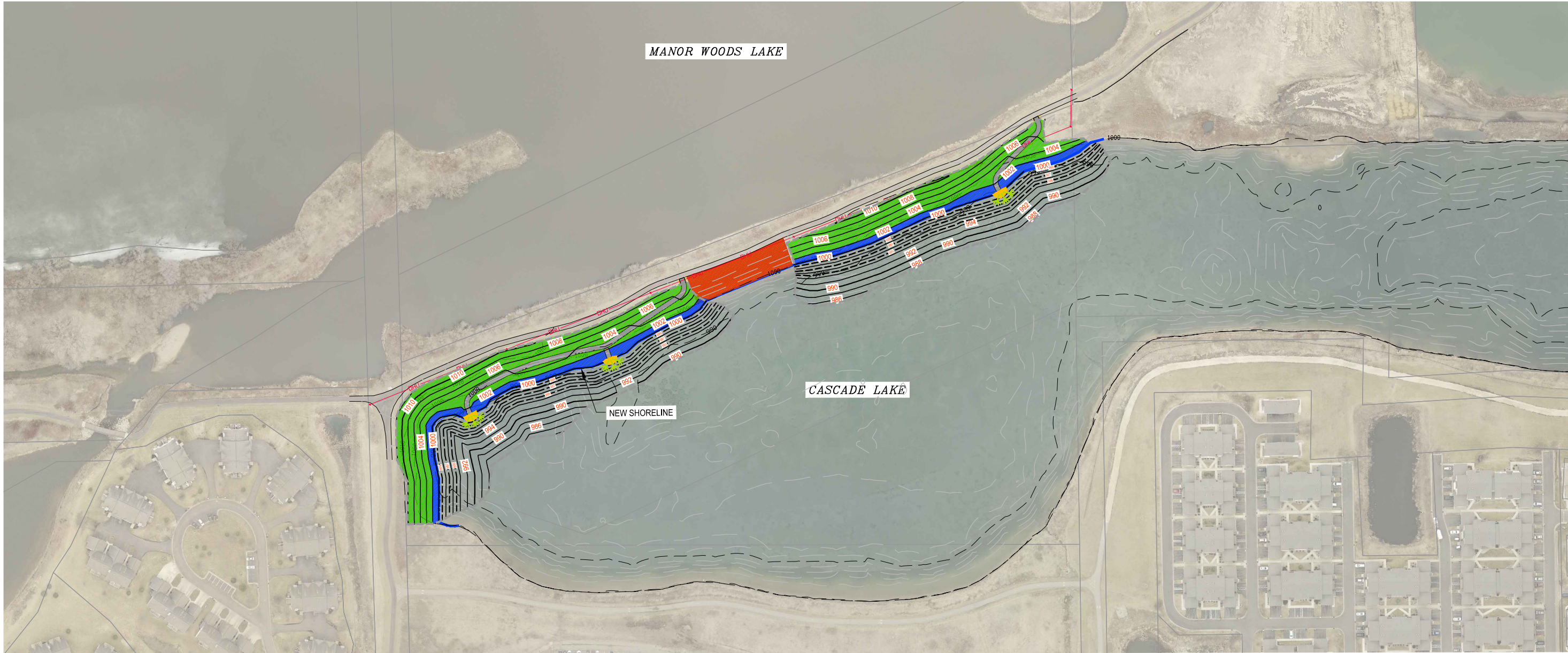
CITY OF ROCHESTER
PARKS & RECREATION
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ROCHESTER, MN 55904

**STABILIZATION & FISH HABITAT
CREATION - NORTH SHORE OF
CASCADE LAKE**
ROCHESTER, MINNESOTA

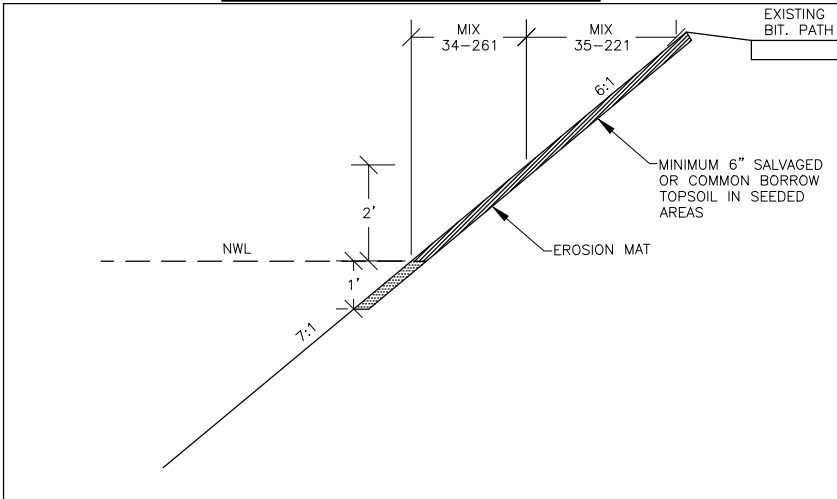
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PROJECT NO: 02186-240
AS NOTED
SCALE: PLAN
REVISION NO. DATE EXPLANATION

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DAVID L. MORRILL, PE
DATE: SEPT 25, 2015
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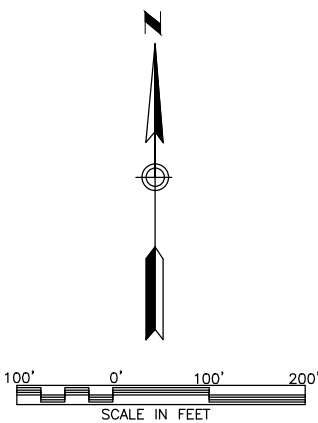
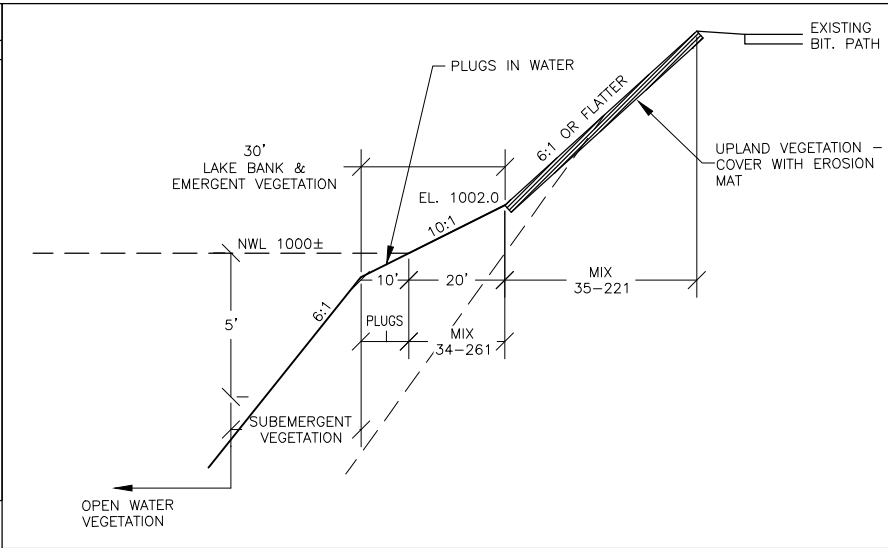
EROSION CONTROL TYPICAL SECTION



SITE STABILIZATION:
ALL DISTURBED AREAS TO BE STABILIZED BY SEEDING AND EROSION BLANKET IN ACCORDANCE WITH:

LOCATION	SEED MIX	APPLICATION RATE	EROSION CONTROL
UPLAND VEGETATION	MnDOT 35-221	40 LBS/ACRE	CAT. 2 BLANKET
ALONG SHORELINE	MnDOT 34-261	40 LBS/ACRE	CAT. 2 BLANKET
ALONG SHORELINE	WETLAND PLUGS- ARROWHEAD & WATER PLANTAIN	1 PER 5 SQ FT	

TYPICAL LAKE SCAPING @ FISHING ACCESS PADS



TABULATION OF PROJECT AREA	
TOTAL PROJECT AREA	4.83 ACRES
AREA OF DISTURBANCE	4.83 ACRES

EROSION CONTROL:

1. EROSION CONTROL BMP'S SHALL BE MAINTAINED BY THE CONTRACTOR UNTIL COMPLETION OF SITE GRADING, ESTABLISHMENT OF VEGETATION AND ACCEPTANCE BY OWNER. MAINTANENCE OF EROSION CONTROL ITEMS SHALL INCLUDE EROSION CONTROL AS REQUIRED. ACCEPTANCE BY OWNER IS DEFINED AS THE TIME VEGETATION IS ESTABLISHED AND GRADING OPERATIONS ARE COMPLETED.
2. CONTRACTOR TO REFER TO PLANS FOR LOCATION OF EROSION CONTROL PRACTICE.
3. FINAL STABILIZATION OF ALL DISTURBED AREAS SHALL INCLUDE SEEDING AND HYDROMULCH.
4. ALL EXPOSED AREAS MUST BE STABILIZED AS SOON AS POSSIBLE TO LIMIT SOIL EROSION BUT IN NO CASE LATER THAN 7 DAYS AFTER CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.

CONTRACTOR IS RESPONSIBLE FOR CONTACTING
GOPHER STATE ONE 1-800-252-1166 TO LOCATE
ALL UTILITIES ON SITE BEFORE CONSTRUCTION BEGINS.

SEDIMENT CONTROL:

1. CONTRACTOR SHALL CLOSE ACCESS TO AREAS WHERE GRADING HAS BEEN COMPLETED IN ORDER TO CONTROL SEDIMENT TRACKING DUE TO CONSTRUCTION TRAFFIC LEAVING SITE.
2. DO NOT DISTURB PAST GRADING LIMITS. EXISITNG VEGETATION IS NEEDED FOR EROSION AND SEDIMENT CONTROL.
3. CONTRACTOR IS RESPONSIBLE FOR CLEANING UP ANY SEDIMENT DEPOSITED ON ADJOINING PROPERTIES, IN THE STREETS OR OFF SITE LOCATIONS.
4. SEE SHEET 6 FOR EROSION DETAILS.

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AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER
UNDER THE LAWS OF THE STATE OF MINNESOTA

DAVID L. MORRILL, PE
DATE: SEPT 25, 2015 LC: NS 12713

**STABILIZATION & FISH HABITAT
CREATION - NORTH SHORE OF
CASCADE LAKE
ROCHESTER, MINNESOTA**

CITY OF ROCHESTER
PARKS & RECREATION
201 4th ST SE, Room 150
ROCHESTER, MN 55904

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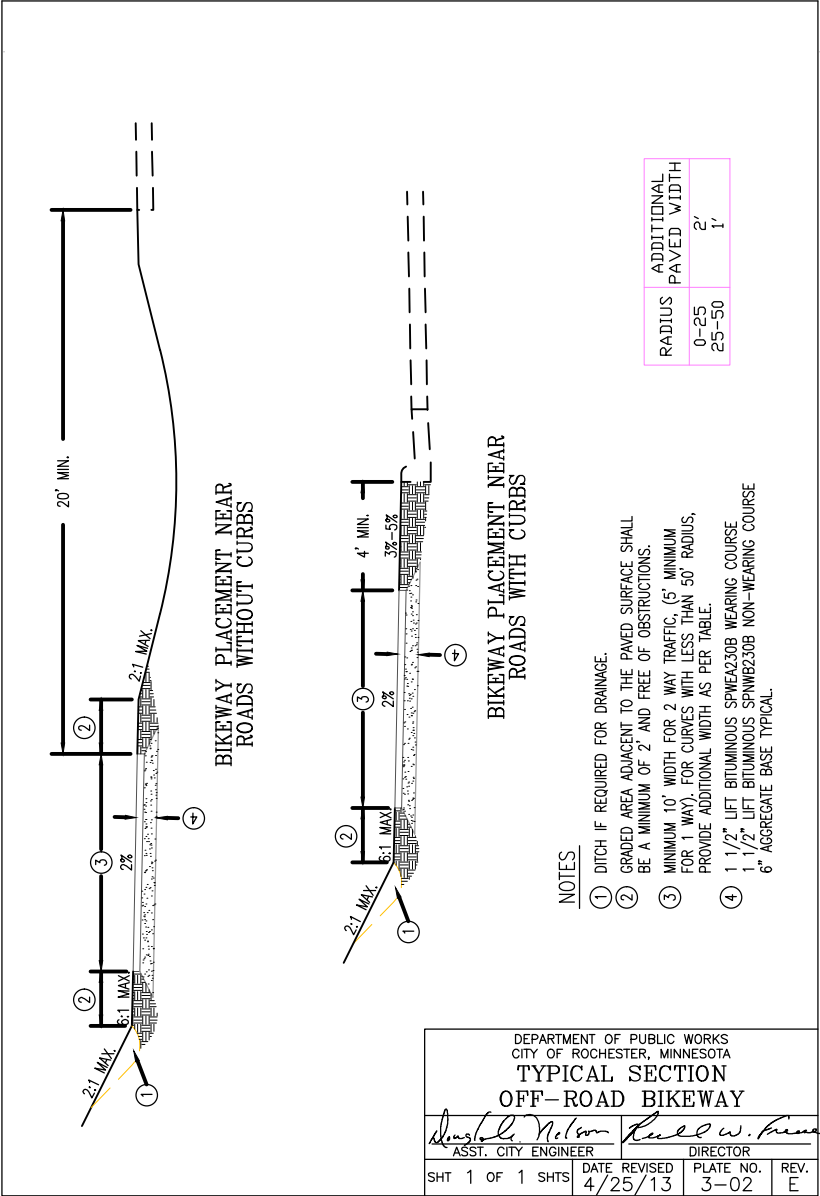
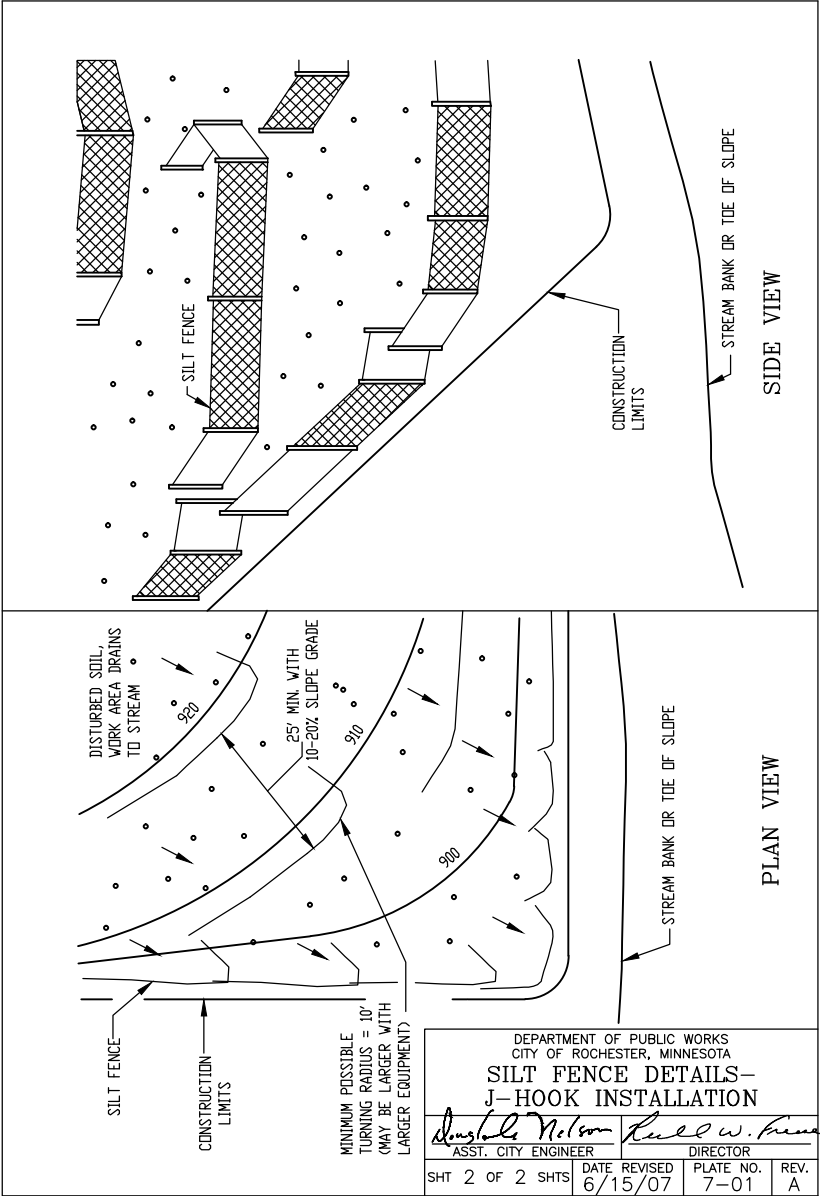


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CITY OF ROCHESTER PARKS AND RECREATION
WSB No. 02186-240

SEEDING & EROSION CONTROL

SHEET 7 OF 10 SHEETS



RADIUS	ADDITIONAL PAVED WIDTH
0-25	2'
25-50	1'

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STORMWATER POLLUTION PREVENTION PLAN (SWPPP) NARRATIVE

PROJECT SITE EVALUATION, ASSESSMENT, AND PLANNING

THIS NARRATIVE IS TO SERVE AS A GUIDANCE PLAN AND MUST BE AMENDED AND MODIFIED AS SITE CONDITIONS CHANGE DURING CONSTRUCTION.

PROJECT LOCATION/DESCRIPTION

PROJECT/SITE NAME: CASCADE LAKE
PROJECT NUMBERS:
PROJECT LOCATION: STREET: NORTH OF 2ND STREET NW-EAST OF CIRCLE DRIVE CITY ROCHESTER, COUNTY: OLMSTED
STATE: MINNESOTA ZIP: 55906
LATITUDE/LONGITUDE: 44.02695N 92.506967 W
SECTION: NW1/4 OF SBL1/4 OF SEC 29 TOWNSHIP: 107N R14W

CONTACT INFORMATION/RESPONSIBLE PARTY

THE CITY OF ROCHESTER OWNS THE LAND, ADJACENT ROADS, AND BASEMENT AREAS ASSOCIATED WITH THE PROJECT. THE CITY OF ROCHESTER IS THE OWNER PERMITTER APPLYING FOR PERMIT COVERAGE AND IS RESPONSIBLE FOR DEVELOPING THIS SWPPP AND ENSURING THE LONG-TERM MAINTENANCE OF THE POST-CONSTRUCTION PERMANENT STORMWATER MANAGEMENT SYSTEM, AS SPECIFIED IN THE SWPPP. THE OWNER WILL ENSURE THAT THE DESCRIBED WORK IN THE SWPPP IS BEING COMPLETED BY THE PRIMARY CONTRACTOR.

OWNER/PERMITTEE: CITY OF ROCHESTER
201 4TH STREET SE
ROCHESTER, MN 55902

THE PRIMARY CONTRACTOR WILL ENTER INTO A CONTRACT WITH CREDESIX HOLDINGS LLC TO COMPLETE THE REQUIRED WORK FOR THIS PROJECT. THE PRIMARY CONTRACTOR WILL ENTER INTO A CO-PERMITTING AGREEMENT WITH THE CITY OF ROCHESTER (THROUGH RECEIPT OF A NPDES PERMIT MODIFICATION FORM), AND THEREBY AGREE TO IMPLEMENT THIS SWPPP IN COOPERATION WITH THE CITY OF ROCHESTER. THE PRIMARY CONTRACTOR IS RESPONSIBLE FOR DEVELOPING A CHAIN OF RESPONSIBILITY PRIOR TO STARTING CONSTRUCTION (REFER TO SWPPP AMENDMENT SECTION). THE NPDES PERMIT MODIFICATION FORM SHALL BE SUBMITTED TO THE MPCA AFTER THE PROJECT IS AWARDED TO THE PRIMARY CONTRACTOR, PRIOR TO LETTING THE PROJECT.

THE PRIMARY CONTRACTOR WILL INSURE THAT INDIVIDUALS OVERSEEING OR IMPLEMENTING THE SWPPP HAVE BEEN PROPERLY TRAINED AND THAT CERTIFICATIONS WILL BE MADE AVAILABLE UPON REQUEST. THIS INCLUDES ANY SUB-CONTRACTORS THAT THE PRIMARY CONTRACTOR EMPLOYS UNDER SEPARATE CONTRACT. THE PRIMARY CONTRACTOR WILL PROVIDE THE CONTACT INFORMATION FOR THE SITE SUPERVISOR/ENGINEER, EROSION CONTROL SPECIALIST, AND BMP INSTALLERS.

THE PRIMARY CONTRACTOR WILL PERFORM A PRECONSTRUCTION SITE VISIT TO ADDRESS ANY AREAS OF CONCERN PERTAINING TO ENVIRONMENTAL COMPLIANCE. THE PRIMARY CONTRACTOR WILL IMPLEMENT AND MAINTAIN BMPs FOR THE DURATION OF CONSTRUCTION PROJECT. THE PRIMARY CONTRACTOR WILL COMPLETE THE REQUIRED SITE INSPECTIONS TO REMAIN IN COMPLIANCE WITH NPDES PERMIT REQUIREMENTS PART II.B, II.C, III.B-P, IV, V, AND APPLICABLE CONSTRUCTION ACTIVITY REQUIREMENTS FOUND IN APPENDIX A, PART C.

CONTRACTOR/PERMITTEE TO BE DETERMINED

WSB & ASSOCIATES HAS BEEN CONTRACTED BY THE OWNER TO DEVELOP THE SWPPP PLAN FOR THIS PROJECT. THIS SWPPP WAS PREPARED BY AN INDIVIDUAL THAT HAS BEEN PROPERLY TRAINED TO ADHERE TO THE REQUIREMENTS OF THE MPCA AND THE NPDES PERMIT. CERTIFICATIONS ARE AVAILABLE UPON REQUEST. WSB & ASSOCIATES WILL OFFER GUIDANCE FOR COMPLIANCE WITH THE NPDES PERMIT BEFORE, DURING, AND AFTER CONSTRUCTION OF THE PROJECT.

SWPPP DEVELOPER AND WATER RESOURCE ENGINEER:

WSB ASSOCIATES
DAVID MORRILL 1648 3RD AVE SE
ROCHESTER, MN 55904
507 289 3519
DMORRILL@WSBIENRBS.COM

AGENCY CONTACTS	PERMIT	NAME	PHONE NUMBER/E-MAIL
MPCA (EMERGENCY)	N/A	STATE DUTY OFFICER	1-800-422-0758
MPCA	NPDES CONSTRUCTION SITE	DAVE BODOVINI/TZ	507 206 2654
CITY OF ROCHESTER	GRADING PERMIT	TROY ERICKSON/PE	507 328 2400

PROJECT DESCRIPTION & SCHEDULE

A SECTION OF THE SHORELINE FOR CASCADE LAKE WILL BE PARTIALLY FILLED AND SLOPED TO REDUCE THE POTENTIAL FOR EROSION AND PROVIDE FISH HABITAT. SOIL WILL BE PLACED ALONG THE EXISTING SHORE TO FLATTEN THE SLOPE AS WELL AS MATERIAL PLACED INTO THE WATER FOR SLOPE STABILIZATION AND WETLAND CREATION.

TEMPORARY CONSTRUCTION SCHEDULE (CONTRACTOR SHOULD PROVIDE ESTIMATED CONSTRUCTION SCHEDULE TO THE ENGINEER)	
CONSTRUCTION ACTIVITIES:	ESTIMATED DATES OF SOIL DISTURBANCE ACTIVITIES:
CLEARING AND GRUBBING OPERATIONS, GRADING, TEMP. POND	SEPTEMBER 2015
GRADING AND FILLING	SEPTEMBER & OCTOBER 2015
FISH HABITAT CREATION	OCTOBER 2015

CONTRACTOR SHALL PROVIDE A RAINFALL GAUGE ON-SITE, WITHIN ONE MILE OF THE SITE, OR SOURCE OF THE WEATHER REPORTING SYSTEM THAT USES SITE SPECIFIC RAINFALL DATA FROM RADAR SURVEILLANCE. THE LOCATION AND SOURCE OF THE RAINFALL GAUGE OR REPORTING SYSTEM MUST BE DOCUMENT IN THE FIRST SWPPP INSPECTION REPORT.

- ALL INSPECTIONS AND MAINTENANCE CONDUCTED MUST BE RECORDED IN WRITING AND RETAINED WITH THE SWPPP IN ACCORDANCE WITH PART III.D OF THE NPDES CONSTRUCTION PERMIT. AMENDMENTS TO THE SWPPP WILL BE MADE BY THE PROJECT ENGINEER OR THE CONTRACTOR AFTER WRITTEN APPROVAL BY THE PROJECT OWNER (OR DESIGNATED REPRESENTATIVE). RECORDS OF EACH INSPECTION AND MAINTENANCE ACTIVITY SHALL INCLUDE:
A. DATE, TIME, AND NAME OF PERSON(S) CONDUCTING INSPECTIONS;
B. FINDINGS OF INSPECTIONS, INCLUDING RECOMMENDATIONS FOR CORRECTIVE ACTIONS;
C. CORRECTIVE ACTIONS (INCLUDING DATES, TIMES, AND PARTY COMPLETING MAINTENANCE ACTIVITIES); INCLUDING DOCUMENTATION/PHOTOS OF IMPLEMENTED BMPs INTENDED TO CORRECT A PROBLEM BUT FAILED.
D. DATE AND AMOUNT OF ALL RAINFALL EVENTS GREATER THAN 1/2 INCH (0.5 INCHES) IN 24 HOURS;
E. DOCUMENTATION OF CHANGES MADE TO THE SWPPP
- THE SWPPP SHALL BE AMENDED TO INCLUDE ADDITIONAL OR MODIFIED BMPs, DESIGNED TO CORRECT IDENTIFIED PROBLEMS OR ADDRESS SITUATIONS UNDER PART III.A.5 OF THE NPDES PERMIT.
A. THERE IS A CHANGE IN DESIGN, CONSTRUCTION, OPERATION, MAINTENANCE, WEATHER OR SEASONAL CONDITIONS THAT HAS A SIGNIFICANT EFFECT ON THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS;
B. INSPECTIONS OR INVESTIGATIONS BY SITE OPERATORS, LOCAL, STATE OR FEDERAL OFFICIALS INDICATE THE SWPPP IS NOT EFFECTIVE IN ELIMINATING OR SIGNIFICANTLY MINIMIZING THE DISCHARGE OF POLLUTANTS TO SURFACE WATERS OR UNDERGROUND WATERS OR THAT THE DISCHARGES ARE CAUSING WATER QUALITY STANDARD DEGRADATION (E.G. NUISANCE CONDITIONS AS DEFINED IN MNR. B. 7050.0210, SUBP. 2); OR
C. THE SWPPP IS NOT ACHIEVING THE GENERAL OBJECTIVES OF MINIMIZING POLLUTANTS IN STORMWATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY, OR THE SWPPP IS NOT CONSISTENT WITH THE TERMS AND CONDITIONS OF THE PERMIT.
D. THE MPCA NOTIFIES THE PERMITTEES(S) IN WRITING THAT THE PROJECT'S STORMWATER DISCHARGES MAY CONTRIBUTE TO NON-ATTAINMENT OF ANY APPLICABLE WATER QUALITY STANDARDS, IMPAIRED WATERS STANDARDS, AND/OR TMDL WASTE LOAD ALLOCATIONS. IN RESPONSE, THE PERMITTEES(S) MUST DEVELOP A SUPPLEMENTAL BMP ACTION PLAN OR APPROPRIATE SWPPP
- THE SWPPP (ORIGINAL OR COPIES), ALL CHANGES TO THE SWPPP, PROJECT MANUAL, AND INSPECTIONS/MAINTENANCE RECORDS MUST BE KEPT AT THE SITE DURING CONSTRUCTION BY THE CONTRACTOR/SITE OPERATOR WHO HAS OPERATIONAL CONTROL OF THAT PORTION OF THE SITE. THE SWPPP CAN BE KEPT IN THE FIELD OFFICE OR ON SITE VEHICLE DURING NORMAL WORKING HOURS.
- THE CONTRACTOR/SITE OPERATOR MUST ASSIGN A TRAINED INDIVIDUAL(S) (PURSUANT TO PART III.A.3) TO OVERSEE THE IMPLEMENTATION, MAINTENANCE, AND REPAIR OF BMPs. THIS INDIVIDUAL(S) SHALL ALSO PERFORM INSPECTIONS, REPAIR/AMEND THE SWPPP (DOCUMENT IN SWPPP AS NECESSARY), AND BE AVAILABLE FOR AN ON-SITE INSPECTION WITHIN 72 HOURS UPON REQUEST BY THE PERMITTED OWNER (OR ITS DESIGNER), LOCAL GOVERNMENT UNITS, OR MPCA. (PART III.F

EROSION CONTROL PRACTICES & PROCEDURES

ALL EXPOSED SOIL AREAS SHALL BE STABILIZED WITHIN 14 DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT PORTION OF THE SITE HAS TEMPORARILY CEASED. ALL EXPOSED SOILS WITHIN 200 FEET AND DRAINING TO A DNR PUBLIC WATER OR MUST BE STABILIZED WITHIN 24 HOURS OF TEMPORARILY OR PERMANENTLY CEASING WORK, DURING THE FISH SPANNING PERIOD. TEMPORARY STOCKPILES WITHOUT SIGNIFICANT SILT, CLAY OR ORGANIC COMPONENTS (E.G., CLEAN AGGREGATE STOCKPILES, DEMOLITION CONCRETE STOCKPILES, SAND STOCKPILES) AND THE CONSTRUCTED BASE COMPONENTS OF ROADS, PARKING LOTS AND SIMILAR SURFACES ARE EXEMPT FROM THIS REQUIREMENT.

TEMPORARY BEST MANAGEMENT PRACTICES

TEMPORARY STABILIZATION BMPs SHALL ONLY BE IMPLEMENTED WHEN PERMANENT STABILIZATION BMPs CANNOT BE IMPLEMENTED WITHIN THE REQUIRED 14 DAY PERIOD.

TEMPORARY/PERMANENT DRAINAGE DITCHES & SHALES: THE NORMAL WETTED PERIMETER OF ANY TEMPORARY OR PERMANENT DRAINAGE DITCH, CHANNEL, OR SWALE THAT DRAINS WATER FROM ANY PORTION OF THE CONSTRUCTION SITE, OR DIVERTS WATER AROUND THE SITE, MUST BE STABILIZED WITHIN THE LAST 200 LINEAL FEET FROM THE PROPERTY EDGE, OR FROM THE POINT OF DISCHARGE INTO ANY SURFACE WATER WITHIN 24 HOURS OF CONSTRUCTION. STABILIZATION REMAINING OF THE REMAINING PORTIONS OF THE CHANNEL MUST BE STABILIZED WITHIN 14 DAYS - ALL STORMWATER CONVEYANCE CHANNELS MUST USE EROSION CONTROL AND VELOCITY DISSIPATION DEVICES WITHIN AND ALONG THE LENGTH OF THE CHANNEL AND AT ANY OUTLETS. TEMPORARY OR PERMANENT DITCHES OR SHALES THAT ARE BEING USED AS A TEMPORARY SEDIMENT CONTAINMENT SYSTEM (WITH PROPERLY DESIGNED ROCK DITCH CHECKS, BIO ROLLS, SILT DIKE ETC.) DO NOT NEED TO BE STABILIZED. THESE AREAS MUST BE STABILIZED WITHIN 24 HOURS AFTER NO LONGER BEING USED AS A SEDIMENT CONTAINMENT SYSTEM. MULCH, KIDNEYWICK, JACKFILER, OR POLYACRYLAMIDE BELOW THE WETTED PERIMETER OF A DITCH, SHALE, OR OTHER SURFACE WATER CONVEYANCE IS NOT ACCEPTABLE STABILIZATION. RAPID STABILIZATION METHOD #3 (WOOD FIBER, NATURAL NET ONLY) IS AN ACCEPTABLE BMP FOR THESE AREAS.

DUST CONTROL: DUST FROM THE SITE WILL BE CONTROLLED BY USING A MOBILE PRESSURE-TYPE DISTRIBUTOR TRUCK TO APPLY PORTABLE WATER TO DISTURBED AREAS. THE MOBILE UNIT WILL APPLY WATER AT A RATE NECESSARY TO PREVENT RUNOFF AND PONDING.

TEMPORARY WINTER COVER: AREAS OF EXPOSED SOILS THAT ARE NOT COMPLETED BEFORE THE WINTER WILL BE STABILIZED WITH TYPE #3 (CERTIFIED AS WEED FREE) ADJACENT TO WETLAND OR STORMWATER PONDS. ALL OTHER DISTURBED AREAS SHALL BE STABILIZED WITH TYPE #1 MULCH, UNLESS ALTERNATIVE MOORE PROTECTIVE BMPs ARE SPECIFIC WITHIN THE SWPPP. THE PROJECT AREA COULD POTENTIALLY BE STILL ACTIVE OVER THE 2014-2015 WINTER SEASON. ALL EXPOSED SOILS SHALL BE STABILIZED BEFORE CONSTRUCTION IS COMPLETED FOR THE 2014 SEASON.

PERMANENT BEST MANAGEMENT PRACTICES

MULCH: STRAW MULCH WILL BE INSTALLED PER MANUFACTURER SPECIFICATIONS TO EXPOSED SOILS AREAS TO PROVIDE PERMANENT COVER FOR VEGETATION ESTABLISHMENT.

LANDSCAPING, FINAL TURF, MISC.	NOVEMBER 2015
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PRE-CONSTRUCTION IMPERVIOUS SURFACE AND DISTURBED AREA CALCULATIONS

TOTAL AREA TO BE DISTURBED = 3 AC
IMPERVIOUS AREA: PRE-CONSTRUCTION = 0 ACRES /POST-CONSTRUCTION = 0 ACRES
NET INCREASE OF IMPERVIOUS AREA = 0 ACRES

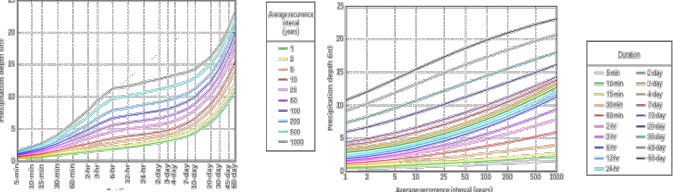
LOCATION OF SWPPP COMPONENTS		
DESCRIPTION	TITLE	LOCATION
SWPPP NARRATIVE	STORM WATER POLLUTION PREVENTION PLAN NARRATIVE	THIS SHEET
SITE CONDITIONS	STORM WATER POLLUTION PREVENTION PLAN NARRATIVE	PLANS
SITE MAP	STEEP SLOPES (3:1) IMPERVIOUS SURFACES, POTENTIAL POLLUTANT GENERATING ACTIVITIES, SOILS, WATER RESOURCES, DNR FISH EXCLUSION "WORK IN WATER RESTRICTIONS- REFER TO SWPPP"	STORM WATER POLLUTION PREVENTION PLAN NARRATIVE AND GRADING PLAN
CONSTRUCTION PHASING/STAGING & AREAS NOT TO BE DISTURBED	GRADING PLAN	GRADING PLAN
DIRECTION OF FLOW (PRE- & POST- CONSTRUCTION)	GRADING PLAN	GRADING PLAN
TEMPORARY EROSION & SEDIMENT CONTROL BMPs	TURF ESTABLISHMENT PLAN AND SWPPP	GRADING PLAN
PERMANENT EROSION CONTROL BMPs	GRADING PLAN	GRADING PLAN
ESTIMATED BMP QUANTITIES	SWPPP	PLANS
BMP DETAILS	DETAIL SHEET	

EXISTING SITE CONDITIONS AND SOILS

SOILS AND NATIVE TOPSOIL: NATIVE TOPSOIL WILL BE STRIPPED AND STOCKPILED FOR FINAL GRADING OPERATIONS, WHERE INDICATED IN THE CONSTRUCTION PLANS AND SPECIFICATIONS. METHODS AND EQUIPMENT TO MINIMIZE SOIL COMPRESSION (IN PROPOSED INFILTRATION AREAS, DEEP LINES OF TREES TO BE PRESERVED, ETC.) SHALL BE DETERMINED BY THE CONTRACTOR'S SWPPP AMENDMENT. SOILS AT THIS SITE ARE FILL MATERIALS DISTURBED BY PREVIOUS CONSTRUCTION AS WELL AS NATURAL UNDISTURBED SOILS.

POTENTIAL CONTAMINATED PROPERTIES EXPECTED TO OCCUR AT THE SITE	
RISK CLASSIFICATION	ENVIRONMENTAL CONCERNS
MEDIUM	EQUIPMENT & MATERIAL STORAGE
LOW	SPILL OR LEAK FROM EQUIPMENT OR TOOLS
MEDIUM	VANDALISM
LOW	UNREGULATED WASTE DISPOSAL ON THE SITE
LOW	POTENTIAL TRANSFORMERS
LOW	POTENTIAL OILS CONTAINING PCB'S

EXPECTED AMOUNT, FREQUENCY, INTENSITY, AND DURATION OF PRECIPITATION: THE NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATE FOR THE PROJECT LOCATION WAS RECENTLY REVIEWED. THE RESULTS OF THIS REVIEW SHOWN BELOW: THIS INFORMATION IS NOT AN AUTHORIZED INSPECTION PROCEDURE AND ESTIMATING CONSTRUCTION ACTIVITIES. THIS INFORMATION DOES NOT NECESSARILY REFLECT ANY DESIGN CRITERIA.



EROSION CONTROL BLANKETS/MATS: CONTRACTOR SHALL VERIFY DURING REGULAR INSPECTIONS THAT NO GULLIES, RILLS, OR SCOUR REPORTING SYSTEM THAT USES SITE SPECIFIC RAINFALL DATA FROM RADAR SURVEILLANCE. THE LOCATION AND SOURCE OF THE RAINFALL GAUGE OR REPORTING SYSTEM MUST BE DOCUMENT IN THE FIRST SWPPP INSPECTION REPORT.

STORM SEWER OUTLETS: PIPE OUTLETS MUST HAVE TEMPORARY OR PERMANENT ENERGY DISSIPATION WITHIN 24 HOURS AFTER HYDRAULIC CONNECTION TO A RECEIVING WATER BODY.

SEDIMENT CONTROL PRACTICES & PROCEDURES

THE CONTRACTOR/SITE OPERATOR ARE RESPONSIBLE FOR THE INSTALLATION, OPERATION, AND CONTINUED MAINTENANCE OF ALL TEMPORARY AND PERMANENT WATER QUALITY MANAGEMENT BMPs, AS WELL AS ALL EROSION PREVENTION AND SEDIMENT CONTROL BMPs, FOR THE DURATION OF THE CONSTRUCTION PROJECT. UNTIL FINAL STABILIZATION IS ACHIEVED, ALL BMPs MUST BE ADEQUATELY LOCATED, DESIGNED, INSTALLED, AND MAINTAINED TO PREVENT EROSION FROM A MINIMUM 0.5 INCH TOTAL RAINFALL EVENT WITHIN 24 HOURS.

ALL NONFUNCTIONAL BMPs MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WITH FUNCTIONAL BMPs BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS UNLESS ANOTHER TIME FRAME IS SPECIFIED IN THE CONTRACTOR'S EXPENSE AND INCIDENTAL TO THE PROJECT COST.

DOWN GRADIENT SYSTEMS: IF THE DOWN GRADIENT TREATMENT SYSTEM IS OVERLOADED, ADDITIONAL UP GRADIENT SEDIMENT CONTROL PRACTICES OR REDUNDANT BMPs MUST BE INSTALLED TO ELIMINATE THE OVERLOADING, AND THE SWPPP MUST BE AMENDED TO IDENTIFY THESE ADDITIONAL PRACTICES.

PERIMETER CONTROL BMPs (SILT FENCES, CHIP SACKS, BIOBOLLS, ETC.): PERIMETER CONTROL BMPs SHALL BE PLACED, AS CLOSE AS POSSIBLE TO FOLLOW A SINGLE CONTROL ELEVATION. ALL SILT FENCES MUST BE REPAIRED, REPLACED, OR SUPPLEMENTED WHEN THEY BECOME NONFUNCTIONAL OR THE SEDIMENT REACHES 1/2 OF THE HEIGHT OF THE FENCE. ALL REPAIRS MUST BE COMPLETED BY THE END OF THE NEXT BUSINESS DAY AFTER DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS

TEMPORARY AND PERMANENT SEDIMENTATION BASINS: A TEMPORARY (OR PERMANENT) SEDIMENT BASIN MUST BE PROVIDED PRIOR TO RUNOFF LEAVING THE CONSTRUCTION SITE OR ENTERING SURFACE WATERS. ALL TEMPORARY BASINS SHALL BE CONSTRUCTED AND OPERATIONAL PRIOR TO GRADING PER THE PLANS AND SPECIFICATIONS, OR TO THE MINIMUM STANDARDS SPECIFIED IN PART III.C OF THE NPDES CONSTRUCTION PERMIT. BASINS MUST BE DESIGNED AND SEDIMENT REMOVED WHEN THE DEPTH OF COLLECTED SEDIMENT IN THE BASIN REACHES 1/2 THE STORAGE VOLUME. DRAINAGE AND REMOVAL MUST BE COMPLETED WITHIN 72 HOURS OF DISCOVERY, OR AS SOON AS FIELD CONDITIONS ALLOW ACCESS (PART IV.B.4.B).

TEMPORARY STOCKPILES: ALL STOCKPILES MUST HAVE SILT FENCE OR EQUIVALENT PERIMETER SEDIMENT CONTROL BMPs IMPLEMENTED AND MAINTAINED AT ALL TIMES. ALL EXPOSED MATERIALS, INCLUDING STORMWATER CONVEYANCES SUCH AS CURB AND GUTTER SYSTEMS, OR CONDUITS AND DITCHES UNLESS THERE IS A BYPASS IN PLACE TO PREVENT STORMWATER RUN-ON INTO THE STOCKPILES (PART IV.C.5).

CONSTRUCTION SITE ENTRANCE/VEHICLE TRACKING: CONTRACTOR MUST MINIMIZE SEDIMENT FROM LEAVING THE CONSTRUCTION SITE (OR ONTO STREETS WITHIN THE SITE) BY IMPLEMENTING BMPs SUCH AS ROCK PADS, SLASH MULCH, CONCRETE OR STEEL WASH RACKS, OR EQUIVALENT SYSTEMS. STREET SWEEPING MUST BE USED DAILY DURING CONSTRUCTION OPERATIONS IF SUCH BMPs ARE NOT ADEQUATE TO PREVENT SEDIMENT FROM BEING TRACKED ONTO THE STREET. TRACKED SEDIMENT MUST BE REMOVED FROM ALL PAVED SURFACES (ON AND OFF-SITE) WITHIN 24 HOURS OF DISCOVERY, OR SOONER AS DIRECTED BY THE PROJECT OWNER TO COMPLY WITH PART IV.C.6 OF THE NPDES CONSTRUCTION PERMIT. MULTIPLE STREET SWEEPINGS AT THE CONTRACTOR'S EXPENSE MAY BE REQUIRED ON ALL ENTRY/EXIT POINTS TO THE SITE AT THE DISCRETION OF THE PROJECT OWNER.

SURFACE WATERS: INCLUDING OFF-SITE AND DOWNSTREAM DRAINAGE DITCHES, CATCH BASINS, AND CONVEYANCE SYSTEMS, MUST BE INSPECTED FOR EVIDENCE OF EROSION AND SEDIMENT DEPOSITION. THE REMOVAL AND STABILIZATION OF EXPOSED SOILS MUST TAKE PLACE WITHIN SEVEN (7) DAYS OF DISCOVERY UNLESS PRECLUDED BY LEGAL, REGULATORY, OR PHYSICAL ACCESS CONSTRAINTS. IF PRECLUDED, REMOVAL AND STABILIZATION MUST TAKE PLACE WITHIN SEVEN (7) CALENDAR DAYS OF OBTAINING ACCESS. THE PERMITTEES ARE RESPONSIBLE FOR CONTACTING ALL LOCAL, REGIONAL, STATE AND FEDERAL AGENCIES AND RECEIVING ANY APPLICABLE PERMITS, PRIOR TO CONDUCTING ANY WORK (PART IV.E.5.C).

INLET PROTECTION: ALL STORM DRAIN INLETS (INCLUDING DOWN GRADIENT, OFF-SITE) MUST BE PROTECTED BY APPROPRIATE BMPs DURING CONSTRUCTION UNTIL ALL SOURCES WITH POTENTIAL FOR DISCHARGING TO THE INLET HAVE BEEN STABILIZED. SILT FENCE IS NOT AN ACCEPTABLE CATCH BASIN INLET PROTECTION BMP. CONTRACTOR SHALL CLEAN, REMOVE AND DISPOSE OF SEDIMENT, AND/OR REPLACE STORM DRAIN INLET PROTECTION ON A ROUTINE BASIS TO ENSURE THE DEVICE IS FULLY FUNCTIONAL PRIOR TO THE NEXT FORECASTED PRECIPITATION EVENT (30% OR GREATER). INLET PROTECTION MAY BE REMOVED FOR A PARTICULAR INLET IF A SPECIFIC SAFETY CONCERN (STREET FLOODING/PREVIEW) HAS BEEN IDENTIFIED AND THE PERMITTEES(S) HAVE RECEIVED WRITTEN CORRESPONDENCE FROM THE JURISDICTIONAL AUTHORITY (E.G. CITY/COUNTY/TOWNSHIP/INDOT ENGINEER) VERIFYING THE NEED FOR REMOVAL. WRITTEN CORRESPONDENCE MUST BE DOCUMENTED IN THE SWPPP AND AVAILABLE WITHIN 72 HOURS UPON REQUEST. PERMISSION TO REMOVE INLET PROTECTION BASED ON A SPECIFIC SAFETY CONCERN MUST STILL BE OBTAINED FROM THE LOCAL JURISDICTIONAL AUTHORITY WITHIN 30 DAYS OF REMOVAL (PART IV.C.4).

CHEMICAL TREATMENTS: CONTRACTOR MUST AMEND THE SWPPP TO INCLUDE THE INTENDED USES AND LOCATIONS OF FLOCCULANTS, POLYMERS, AND OTHER SEDIMENTATION TREATMENT CHEMICALS. CHEMICAL TREATMENTS MAY ONLY BE APPLIED IN AREAS WHERE TREATED STORMWATER IS DISCHARGED TO A RECEIVING SEDIMENT CONTROL SYSTEM (NOT DIRECTLY DISCHARGED TO NATURAL WATER BODIES). THIS INCLUDES DOCUMENTING THE EXPECTED SOIL TYPES, MANUFACTURER'S RECOMMENDED DOSING, APPLICATION RATES/QUANTITIES, AND MONITORING RESULTS (TURBIDITY, PH).

DEWATERING, STREAM DIVERSION, AND BASIN DRAINING

DEWATERING, OR BASIN DRAINING IS ANTICIPATED DURING CONSTRUCTION OF THIS PROJECT. WHEN DEWATERING OR BASIN DRAINING IS REQUIRED, THE CONTRACTOR SHALL DEVELOP A DETAILED DEWATERING PLAN AND NARRATIVE TO THE PROJECT ENGINEER PRIOR TO UNDERTAKING THESE ACTIVITIES. DEWATERING PLAN MUST INCLUDE BMP'S TO PREVENT SEDIMENT TRANSPORT, EROSION, AND ADVERSE IMPACTS TO DOWNSTREAM RECEIVING WATERS. THE DEWATERING PLAN MUST ALSO INCLUDE ANY SPECIFIC CHEMICAL TREATMENTS (FLOC, POLYMERS, ETC.) THAT WILL BE USED (REFER TO "SEDIMENT CONTROL PRACTICES & PROCEDURES"). IF AN APPROVED TMDL WASTE LOAD ALLOCATION IS ESTABLISHED FOR CONSTRUCTION ACTIVITIES ON A RECEIVING WATERBODY, THE CONTRACTOR MUST IMPLEMENT ALL NECESSARY BMP'S TO MEET THE ASSIGNED WLA. THE DEWATERING PLAN AND DSR APPROPRIATIONS PERMIT WILL BECOME PART OF THE DEWATERING WATER PLAN. IF TURBID WATER WAS SEDIMENT MUST BE DISCHARGED TO A TEMPORARY OR PERMANENT SEDIMENTATION BASIN (AND/OR OTHER APPROPRIATE BMPs) ON THE PROJECT SITE WHENEVER POSSIBLE. DISCHARGE FROM THE TEMPORARY OR PERMANENT SEDIMENTATION BASIN MUST BE VISUALLY CHECKED TO ENSURE ADEQUATE TREATMENT IS OBTAINED IN THE BASIN AND THAT NUISANCE CONDITIONS (SEE MTRM. B. 7050.0210, SUBP. 2), IMPACTS TO WETLANDS, AND EROSION IN

DESCRIPTION OF RECEIVING WATERS: STORMWATER FROM THIS PROJECT WILL BE CONVEYED INTO A STORM WATER BASIN, THEN TO THE NORTH BRANCH OF CASCADE CREEK.

DESCRIPTION OF IMPAIRED WATERS OR WATER SUBJECT TO TMDLS: A SPECIAL AND IMPAIRED WATERS SEARCH WAS COMPLETED USING THE MPCA SEARCH ENGINE (HTTP://PCA-GIS02.PCA.STATE.MN.US/GSW/INDEX.HTML) ON 1/21/2014. BASED ON THAT REVIEW, CASCADE CREEK IS AN IMPAIRED WATERS (WITH CONSTRUCTION RELATED IMPAIRMENTS).

PHASING/STAGING & AREAS NOT TO BE DISTURBED

THE PRESERVED AREAS OF EXISTING VEGETATION ARE IDENTIFIED ON THE PLAN SHEETS AS "DO NOT DISTURB AREA". THERE IS NO CONSTRUCTION PHASING OR STAGING DEFINED BY THE OWNER FOR THIS PROJECT. THE SCHEDULE FOR INSTALLING TEMPORARY BMPs SHALL BE INCORPORATED INTO THE CONTRACTOR'S SCHEDULE FOR EACH CONSTRUCTION STAGE AND PRESENTED TO THE OWNER'S REPRESENTATIVE. THE PROJECT'S CONSTRUCTION PHASING AND STAGING IS DEFINED BY THE CONSTRUCTION STAGING AND PROJECT SPECIFICATIONS.

ENVIRONMENTALLY SENSITIVE AREAS

STEEP SLOPES: EXISTING AND PROPOSED SLOPES 1 IN 3 (33.33% AND STEEPER) THAT ARE PROPOSED TO BE DISTURBED ARE ILLUSTRATED ON THE GRADING PLAN. STEEP SLOPES MAYBE TEMPORARILY CREATED DURING GRADING OPERATIONS, AT WHICH TIME TEMPORARY BMPs MUST BE IMPLEMENTED BY THE CONTRACTOR (THROUGH AN APPROVED SWPPP AMENDMENT) WITHIN 14 DAYS OF NO LONGER WORKING THE STEEP SLOPE.

CONTAMINATED PROPERTIES: THE MPCA'S "WHAT'S IN MY NEIGHBORHOOD" DATABASE (PCA-GIS02.PCA.STATE.MN.US/WMH/INDEX.HTML) WAS REVIEWED. THE RESULTS OF THIS REVIEW SHOW NO KNOWN CONTAMINATED PROPERTIES OR LEAK SOURCES LOCATED WITHIN AND ADJACENT TO THE PROJECT LIMITS- NONE

STORMWATER POLLUTION MITIGATION MEASURES (AS IDENTIFIED FROM ENVIRONMENTAL REVIEW): NO NORMAL ENVIRONMENTAL REVIEW WAS REQUIRED FOR THIS PROJECT, THEREFORE, NO ADDITIONAL STORMWATER RELATED MITIGATION MEASURES APPLY.

KARST AREAS: THIS SITE IS WITHIN A KARST AREA. FUTURE DESIGN OF PERMANENT STORMWATER MANAGEMENT FEATURES WILL ADDRESS THE KARST SETTING.

SITE PLAN REQUIRED AREAS: NO AREAS OF HIGH ENVIRONMENTAL RISKS ARE KNOWN TO BE LOCATED WITHIN OR IMMEDIATELY ADJACENT TO THE PROJECT LIMITS.

FLOOD CONTINGENCY PLAN: NO PROJECT ACTIVITIES ARE LOCATED WITHIN A 100-YEAR FLOODPLAIN OR FLOODWAY, THEREFORE, A FLOOD CONTINGENCY PLAN IS NOT REQUIRED. THE PROJECT ENGINEER (AT THEIR DISCRETION) MAY REQUIRE A PREVENTATIVE FLOOD CONTINGENCY PLAN FOR SPECIFIC PROJECT ACTIVITIES AND AREAS THAT ARE NOT LOCATED IN A 100-YEAR FLOODPLAIN OR FLOODWAY.

FISH EXCLUSION DATES: NA

AQUATIC INVASIVE SPECIES: NA

WETLANDS: THERE ARE SEVERAL WETLANDS DOWN SLOPE FROM THE PROJECT AREA AND MUST BE PROTECTED TO THE MAXIMUM EXTENT POSSIBLE. EROSION CONTROL AND TEMPORARY SEDIMENT BASIN HAVE BEEN DESIGNED TO PROTECT THE WETLANDS.

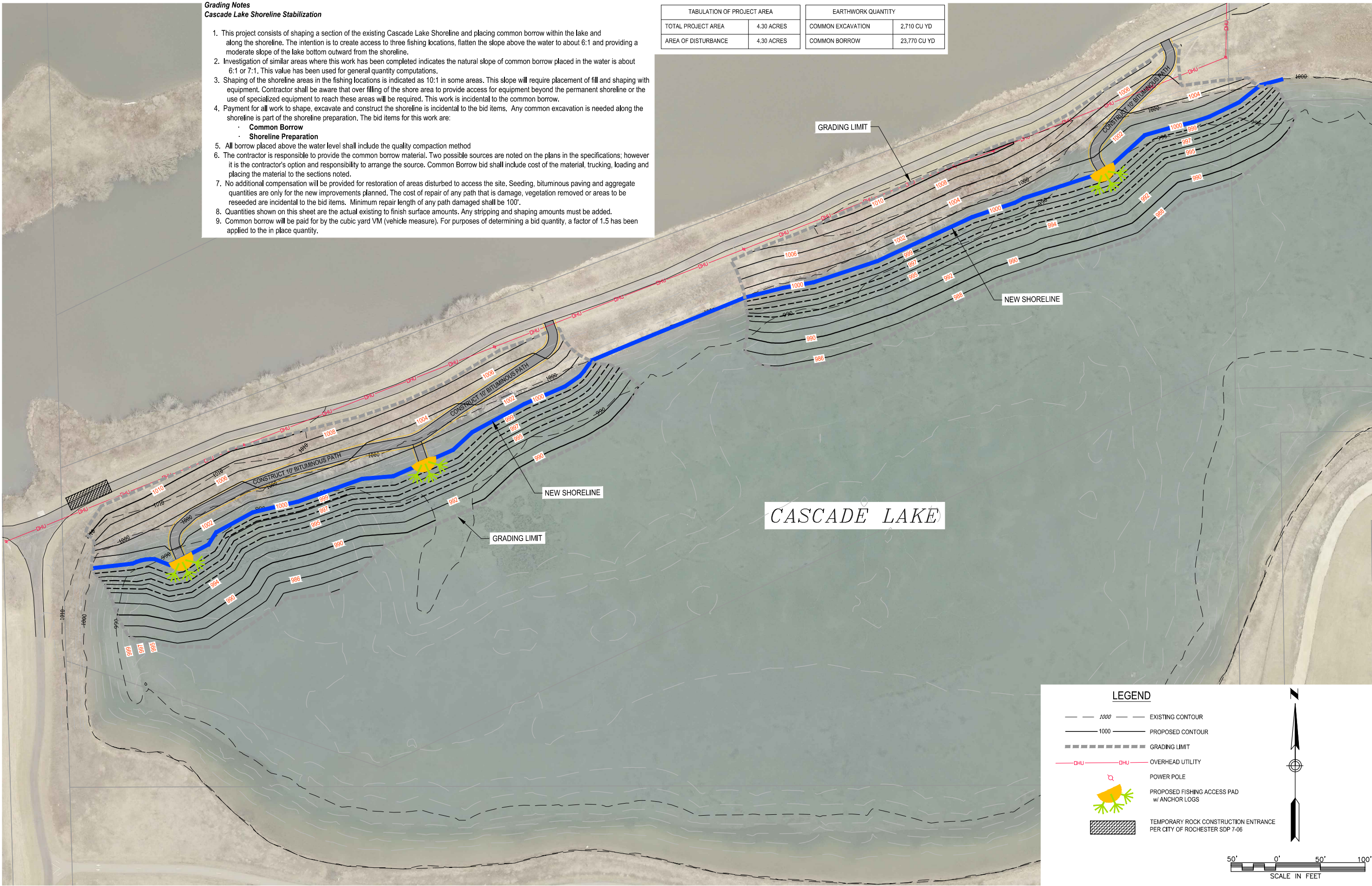
POTENTIAL SOURCES OF POLLUTION

CONSTRUCTION ACTIVITIES ASSOCIATED WITH POTENTIAL POLLUTANTS

(CHECK IF POLLUTANT APPLIES TO SITE.)

ACTIVITY TYPE	POLLUTANT	VISUALLY OBSERVABLE
SOIL DISTURBANCE		
<input checked="" type="checkbox"/> INSTALLATION OF STABILIZED EXITS, TURBID WATER, CLOUDY AIR SEDIMENT AND EROSION CONTROL BMPs	SEDIMENT AND ORGANICS, FUGITIVE DUST	FUGITIVE DUST
<input checked="" type="checkbox"/> CLEAR/GRUB	SEDIMENT AND ORGANICS, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> IMPORT/EXPORT OPERATIONS	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> REMOVALS/COMPACTION	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> MASS/FINE GRADING	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> EXCAVATIONS, TRENCHING	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
<input checked="" type="checkbox"/> TOPSOIL STRIPPING, STOCKPILING	SEDIMENT, FUGITIVE DUST	TURBID WATER, CLOUDY AIR
ASPHALT		
<input checked="" type="checkbox"/> STREET CONSTRUCTION, IMPROVEMENTS	HYDROCARBONS, FUGITIVE DUST	OLILY SHEEN, CLOUDY AIR
<input checked="" type="checkbox"/> STREET REMOVAL, DEMOLITION	HYDROCARBONS, FUGITIVE DUST	OLILY SHEEN, CLOUDY AIR
CONCRETE LADEN LIQUID		
<input checked="" type="checkbox"/> CURB AND GUTTER, MANHOLE STRUCTURES	PH	CLOUDY TO MILKY WATER
<input checked="" type="checkbox"/> SIDEWALKS, DRIVEWAY APRONS	PH	CLOUDY TO MILKY WATER

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Grading Notes
Cascade Lake Shoreline Stabilization

1. This project consists of shaping a section of the existing Cascade Lake Shoreline and placing common borrow within the lake and along the shoreline. The intention is to create access to three fishing locations, flatten the slope above the water to about 6:1 and providing a moderate slope of the lake bottom outward from the shoreline.
2. Investigation of similar areas where this work has been completed indicates the natural slope of common borrow placed in the water is about 6:1 or 7:1. This value has been used for general quantity computations.
3. Shaping of the shoreline areas in the fishing locations is indicated as 10:1 in some areas. This slope will require placement of fill and shaping with equipment. Contractor shall be aware that over filling of the shore area to provide access for equipment beyond the permanent shoreline or the use of specialized equipment to reach these areas will be required. This work is incidental to the common borrow.
4. Payment for all work to shape, excavate and construct the shoreline is incidental to the bid items. Any common excavation is needed along the shoreline is part of the shoreline preparation. The bid items for this work are:
 - Common Borrow
 - Shoreline Preparation
5. All borrow placed above the water level shall include the quality compaction method
6. The contractor is responsible to provide the common borrow material. Two possible sources are noted on the plans in the specifications; however it is the contractor's option and responsibility to arrange the source. Common Borrow bid shall include cost of the material, trucking, loading and placing the material to the sections noted.
7. No additional compensation will be provided for restoration of areas disturbed to access the site. Seeding, bituminous paving and aggregate quantities are only for the new improvements planned. The cost of repair of any path that is damage, vegetation removed or areas to be reseeded are incidental to the bid items. Minimum repair length of any path damaged shall be 100'.
8. Quantities shown on this sheet are the actual existing to finish surface amounts. Any stripping and shaping amounts must be added.
9. Common borrow will be paid for by the cubic yard VM (vehicle measure). For purposes of determining a bid quantity, a factor of 1.5 has been applied to the in place quantity.

TABULATION OF PROJECT AREA	
TOTAL PROJECT AREA	4.30 ACRES
AREA OF DISTURBANCE	4.30 ACRES

EARTHWORK QUANTITY	
COMMON EXCAVATION	2,710 CU YD
COMMON BORROW	23,770 CU YD